Amendments to the Claims

The "Listing of Claims" replaces all prior versions of claims in the application.

Listing of Claims:

1-18. (Cancelled).

19. (Previously Presented) A method for non-invasive, *in vivo* determination of the conductivity of nerves in a region of skin, said method comprising:

(a) providing a facial skin substrate to be analyzed;

(b) applying a first non-invasive electrode to a first measuring point of the facial skin substrate for detecting the electrical signals from the nerves in the region of the first measuring point;

(c) applying a second non-invasive electrode to a second measuring point of the facial skin substrate for detecting the electrical signals from the nerves in the region of the second measuring point;

(d) subjecting the facial skin substrate to stimulation *in vivo*; and

(e) recording the electrical signals detected by the first and second non-invasive electrodes; and

(f) analyzing the electrical signals for the conductivity of the nerves in the region of the first and second measuring points with an evaluation circuit, the evaluation circuit comprising at least one amplifying element, at least one processing element, and at least one microprocessor including at least one recording element, and a display.

20. (Previously Presented) The method according to claim 19, wherein the stimulation comprises electrical stimulation.

21. (Previously Presented) The method according to claim 20, wherein the electrical stimulation is provided by a stimulation circuit comprising at least two stimulation

electrodes in contact with an area of the facial skin substrate subject to the stimulation and an electrical stimulator connected to the microprocessor.

22. (Previously Presented) The method according to claim 19, wherein the facial skin substrate subjected to stimulation is further subjected to a stress and the electrical signals detected by the first and second non-invasive electrodes with the stress is compared to the electrical signals detected by the first and second non-invasive electrodes without the stress.

23. (Cancelled).

24. (Previously Presented) The method according to claim 19, wherein the first non-invasive electrode is positioned such that it is capable of transmitting signals representative of the electrical activity of at least one branch of a facial trigeminal nerve selected from the group consisting of an ophthalmic branch, a maxillary branch, a mandibular branch and combination thereof.

25. (Previously Presented) The method according to claim 24, wherein the at least one branch comprises the maxillary branch.

26. (Previously Presented) The method according to claim 19, further comprising applying a weak alternating current to the first non-invasive electrode and measuring the impedance of the facial skin substrate.

27. (Currently Amended) An apparatus for non-invasive, *in vivo* determination of the conductivity of nerves in a region of skin, said apparatus comprising:

(a) at least one non-invasive measuring electrode suitable for detecting a signal representative of the electrical ~~activity~~ conductivity of a sensory nerve of a facial skin substrate *in vivo*;

(b) an electronic stimulator connected to at least one stimulation electrode;

(c) at least one reference electrode;

(d) a circuit connected to the at least one non-invasive measuring electrode, the electronic stimulator, and the at least one reference electrode for evaluating signals detected by said electrodes, the circuit comprising at least one amplifying element, at least one processing element, and at least one microprocessor that includes at least one recording element, and a display, wherein a curve representative of differentials in the signals detected by the at least one non-invasive measuring electrode before and after a stimulation, as a function of time, is created and displayed.

28. (Previously Presented) The apparatus according to claim 27, wherein the at least one non-invasive measuring electrode is non-polarizable or weakly polarizable.

29. (Previously Presented) The apparatus according to claim 27, wherein the at least one non-invasive measuring electrode comprises a material selected from the group consisting of stainless steel, tungsten, noble metals and mixtures thereof.

30. (Previously Presented) The apparatus according to claim 27, further comprising an adaptable holder and an adjustable arm having a first end and a second end, wherein the first end is connected to the adaptable holder, and wherein the at least one non-invasive measuring electrode is connected to the second end.

31. (Previously Presented) The apparatus according to claim 27, comprising at least two non-invasive measuring electrodes, wherein at least one non-invasive measuring electrode is capable of measuring impedance of the facial skin substrate.

32. (Previously Presented) The apparatus according to claim 31, further comprising at least one adjustable voltage generator associated with at least one transmitting aerial erected in proximity to the at least one non-invasive measuring electrode capable of measuring impedance.

33. (Previously Presented) The apparatus according to claim 27, wherein the at least one amplifying element comprises at least one preamplifier having a high input impedance over a voltage range of from -3 to +3 volts.

34. (Previously Presented) The apparatus according to claim 33, wherein the at least one preamplifier is connected directly to the at least one reference electrode.

35. (Previously Presented) The apparatus according to claim 33, wherein the at least one preamplifier is connected directly to the non-invasive measuring electrode.

36. (Previously Presented) The apparatus according to claim 33, wherein the at least one preamplifier is connected to the non-invasive measuring electrode by a shielded cable.

37. (Previously Presented) The apparatus according to claim 36, wherein the shielded cable comprises a shield connected to an output of the at least one amplifying element.

38. (Previously Presented) The apparatus according to claim 27, wherein the at least one processing element comprises an analog/digital converter.